

Appl. No. 10/682,092

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REMARKS/ARGUMENTS

**Status of Claims**

Claims 1-35 remain.

**35 U.S.C 103 Claim Rejections**

The requirements for establishing a prima facie case of obviousness as set out in the MPEP Section 2143.01 require that the reference or references when combined teach all of the claimed limitations, that there be a reasonable expectation of success in realizing the claimed invention, and that there be a motivation to combine the references.

The Examiner has rejected claims 1-4, 12, 13, 15, 16, 30 and 32-35 under 35 U.S.C. 103(a) as being unpatentable over Munoz-Garcia et al. (Munoz-Garcia), U.S. Patent No. 6,340,948, in view of Gross et al. (Gross), US Patent No. 6,307,507.

With regard to claim 1, the Examiner alleges that Munoz-Garcia discloses the majority of the features of this system claim. However, the Examiner states that Munoz-Garcia does not specifically disclose a system with a plurality of operating modes being associated with respective array antenna gain patterns having different beam widths. The Examiner alleges that Gross discloses a system wherein a plurality of operating modes being associated with respective array antenna gain patterns having different beam widths (i.e. the phase antenna array could be enabled to operate in a mode having a broad, lower power, low bandwidth beam and could also be enabled to operate in a mode having narrow width beams.) The Examiner has further alleged that a motivation for combining both teachings would have been "to provide a system wherein a single antenna may be used to generate a large number of beams, with improved beam coverage and reduced dropoff (Munoz-Garcia, col. 3 lines 16-19).

Applicant respectfully disagrees.

As a preliminary matter, Applicant submits that the prior art cited by the

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Examiner is not analogous to that of the claimed invention.

Only references from arts analogous to that of the claimed invention may comprise prior art. In this case, both Munoz-Garcia and Gross are classified in class 342/363, i.e. Communications: Directive Radio Wave Systems and Devices (E.G., Radar, Radio Navigation), including a steerable array, with a matrix. By contrast, the present application is classified under class 455/562.1, i.e. Telecommunication equipment, Radiotelephone equipment detail, base station detail, having specific antenna arrangement.

This distinction in classifications underlies the significant difference between the prior art and the present application: namely that the antenna systems of both prior art patents relate to satellite-based antenna systems, whereas the antenna system of the present application relates to a terrestrial telecommunications system. Satellite antenna systems are "designed to transmit and receive an array of multiple beams, each directed toward of the surface of the Earth" (Munoz-Garcia, column 1, lines 13-15), such satellites being in "intermediate circular orbits (ICO), at a height, for example of 10,000 km above the Earth" (Munoz-Garcia, column 4, lines 1-3). Satellite antenna systems can also be used on satellites in "low-earth orbit (LEO), medium-earth orbit (MEO), high-earth orbit (HEO), or geosynchronous orbit (GEO). By contrast, the telecommunications antenna of the present application is described in one embodiment as being used in a "distributed wireless communication network with a network access point, a plurality of wireless access routing points and a plurality of wireless transit links." (present application, page 9, line 24 – page 10, line 5).

Furthermore, in both Munoz-Garcia and Gross there is a discussion of the weight and power consumption limitations present on satellites. Indeed, these are admitted to be the prime motivations for the array antenna of Munoz-Garcia and the multi-mode antenna of Gross. However, weight and power consumption in space are of course not prime considerations in the design of a terrestrial telecommunications system.

Clearly, the problems faced by a person skilled in the art of antenna design on a satellite in orbit are different from those faced by a skilled person in the art of terrestrial telecommunications antenna design. Applicant therefore submits that the prior art is from a

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different field of endeavour from that claimed and is not reasonably pertinent to the problem faced by the Applicant. Applicant therefore requests that the Examiner withdraw the citations of Munoz-Garcia and Gross.

Turning now to the question of motivation to combine, Applicant submits that the Examiner has failed to satisfactorily explain why one of ordinary skill in the art at the time the invention was made would have been motivated to make the proposed modification. The MPEP, Section 2143.01, sets out three possible sources of motivation to combine, namely: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. It is respectfully submitted that the Examiner has not established a motivation to combine the references from any one of the three sources.

With regard to the first source for a motivation to combine, Applicant submits that the nature of the problem to be solved is not the same in the two references. While the antenna system in Munoz-Garcia is directed to the generation of a regularly angularly dispersed array of simultaneous radiation beams from an antenna array, Gross is directed towards operating a single phased-array antenna on a satellite based communications node in more than one mode. Applicant submits that these are directed to different problems.

With regard to a second source for a motivation to combine, Applicant submits that neither of the two pieces of cited art suggest the subject matter of the other piece of prior art in a manner that would lead one skilled in the art to arrive at the claimed invention by a review of the two references. First, neither reference refers to the other. Furthermore, the respective prior art does not suggest, either alone or in combination the desirability of the claimed invention. As clearly stated In *re* *Kotzab*, 55 USPQ2d 1313, 1318 "Identification of prior art statements that, in abstract, appear to suggest claimed limitation does not establish prima facie obviousness without a finding as to specific understanding or principle within knowledge of skilled artisan that would have motivated one with no knowledge of invention at issue to make combination in manner claimed". Applicant submits that the Examiner has combined the teachings of Munoz-Garcia (which deal with the generation of a regularly angularly dispersed array of simultaneous radiation beams from a satellite-based array antenna) with wholly unrelated teachings of Garcia (dealing with multi-mode operations of a satellite-based array antenna) to arrive at the claimed invention.

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Applicant submits that there is no teaching whatsoever in Munoz-Garcia to suggest that a multi-mode operation was even contemplated let alone desirable.

With regard to the third source for a motivation to combine, Applicant submits that the Examiner has failed to show motivation based on the knowledge of persons of ordinary skill in the art. The Examiner has stated that a motivation for combining the two references is "Providing a system where a single antenna may be used to generate a large number of beams, with improved beam coverage and reduced dropoff", as taken from Munoz-Garcia at column 3, lines 16-19. Applicant submits that there is nothing in the sentence quoted by the Examiner that relates to a motivation to provide a multi-mode of operation as set forth in Gross. Indeed, Munoz-Garcia is completely silent to the fact that the array antenna described therein could be operated in more than one mode. In addition, the Examiner does not provide any clear indication of the particular knowledge that one skilled in the art would have at the time of the invention for combining Munoz-Garcia and Gross, especially in view of the fact that, as noted above, Munoz-Garcia deals with the generation of a regularly angularly dispersed array of simultaneous radiation beams from a satellite-based array antenna and Gross deals with multi-mode operations of a satellite-based array antenna which are two wholly unrelated concepts.

In *re Fine*, 5 USPQ2d 1596, 1600 also has established the clear requirement for an objective teaching or generally available knowledge that would lead one skilled in the art to combine teachings of existing references. Reference is made to *W.L. Gore* 721 F.2d at 1553 : "To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references or record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." Applicant submits that this is what the Examiner has done in the present case by combining two satellite-based antenna systems which are wholly unrelated to each other to allegedly produce the claimed invention.

It is further well established that the fact that a reference can be combined is not sufficient to establish prima facie obviousness. Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so. See MPEP 2143.02 and *In re Mills*, 916 F.2d 680, 16 USPQ 2d 1430.

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As noted above, there is discussion whatsoever present in Munoz-Garcia that a multi-mode operation even exists let alone is desirable. Applicant submits that even if the antenna array in Munoz-Garcia is capable of being modified to operate in multi-mode operation as disclosed in Garcia, there is no suggestion or motivation for doing so.

As the Examiner has failed to satisfy the necessary criteria for establishing a prima facie case of obviousness with respect to claim 1, for at least the reasons discussed above, Applicant submits that claim 1 patentably distinguishes over the combination of Munoz-Garcia and Gross. It is respectfully submitted that the Examiner reconsider and withdraw the obviousness rejection of claim 1.

Independent claims 15 and 30 recite similar subject matter to claim 1 and for at least the reasons discussed above Applicant respectfully submits that the claims patentably distinguish over the combination of Munoz-Garcia and Gross and they are allowable.

Dependent claims 2-4, 12, 13, 16 and 32-35 are dependent upon independent claims 1, 15 and 30, either directly or indirectly and Applicant respectfully submits that they are allowable as well.

It is respectfully requested that the Examiner reconsider and withdraw the obviousness rejection of claims 2-4, 12, 13, 15, 16, 30 and 32-35.

Claims 5-11, 14, 17-28, 31 were rejected based on the combination of Munoz-Garcia, Gross and other cited references.

Claims 5-11, 14 and 17-19 are dependent on claims 1 and 15, either directly or indirectly. Applicant respectfully submits that the claims patentably distinguish over the combination of Munoz-Garcia and Gross and the additional cited references and that they are allowable as well.

With regard to independent claims 20 and 29 and claims dependent on them, Applicant submits that the scope of subject matter recited in these claims is similar to that of claim 1. As Applicant submits that that claims patentably distinguish over the combination of

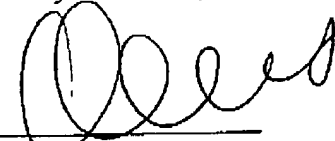
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Munoz-Garcia and Gross, it is further submitted that for at least the reasons discussed above the claims patentably distinguish over the combination of Munoz-Garcia and Gross in view of the other cited references.

In view of the forgoing, early favourable consideration of this application is earnestly solicited.

Respectfully submitted,

By



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